

CASSINI POWER MANAGEMENT AND DISTRIBUTION

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The Cassini Power Subsystem provides power generation, management and distribution functions for the Saturn Orbiter S/C. Power is derived from three parallel Radioisotope Thermoelectric Generators. The power is combined to form a single spacecraft power bus regulated to 30 Vdc within the Power Subsystem. Individual power lines are distributed to a maximum of 192 user loads through Solid State Power Switches. User loads are powered on and off via digital commands from the Information System which turn on and off the power switches. The power bus voltage is regulated by controlling the effective bus load in response to a bus voltage error signal. As load increases, the bus voltage decreases, and as loads decrease, the bus voltage increases. The bus error signal is used to adjust controllable shunt loads and thereby managing the effective bus load and the user load power. User load power management and distribution are two major functions of the Cassini Power Subsystem.